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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/675,280	07/01/96	WEBER R	TI-19646.1

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JERRY W. MILLS
BAKER & BOTTSENTS
2001 ROSS AVENUE
DALLAS TX 75201

EXAMINER	
ATKINSON, C	
ART UNIT	**PAPER NUMBER**
3743	29

DATE MAILED: 08/11/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☑ Responsive to communication(s) filed on 4/29/99

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☑ Claim(s) 1-2, 5-8, 11-12 and 17-24 is/are pending in the application.
Of the above, claim(s) 5-6, 11-12 and 23-24 is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☑ Claim(s) 1-2, 7-8 and 17-22 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☑ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☑ Notice of Reference Cited, PTO-892
☑ Information Disclosure Statement(s), PTO-1449, Paper No(s). 28
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

★ U.S. GPO: 1996-421-632/40206

Continued Prosecution Application

The request filed on April 29, 1999 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) is acceptable and a CPA has been established. An action on the CPA follows.

Claims 1-2, 5-8, 11-12 and 17-24 are pending.

Claims 5, 6, 11, 12, 23 and 24 are directed to an invention that is independent or distinct from the invention originally claimed (i.e. species B as illustrated in Figure 2) for the following reasons: Claims 5, 6, 11, 12, 23 and 24 read on the abandoned invention drawn to species A as illustrated in Figure 1.

Since applicant has received an action on the merits for the originally presented invention (i.e. species B as illustrated in Figure 2), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 5, 6, 11, 12, 23 and 24 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b).

Specification

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using

it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of 37 CFR 1.71(a)-(c):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

(b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.

(c) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

The specification is objected to under 37 CFR 1.71 because the originally filed specification fails to disclose "fibers disposed to provide a matrix" as claimed in claim 1.

The specification is objected to as failing to provide clear support for the claim terminology. 37 CFR § 1.75(d)(1) requires

that terms and phrases used in the claims find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description. Specifically, the term "integral" does not appear in the specification.

The disclosure is objected to because of the following informalities: On page 1 the recitation "knwon" is misspelled. Appropriate correction is required.

The amendment filed March 17, 1997 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "aluminum fibers".

Applicant is required to cancel the new matter in the reply to this Office action.

Claim Rejections - 35 USC § 112

Claims 1-2, 7-8 and 17-22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. Regarding claim 1, the specification fails to disclose "fibers disposed to provide a matrix". The remaining claims are included due to dependency.

Claim 2, 8, 18, 20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 2, the recitations "the solid phase" and "the liquid phase" lack antecedence. The remaining claims are included due to dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103,

the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1, 7, 17 and 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Lebailly et al. in view of Hamburgen.

The patent of Lebailly et al., in Figures 1-3, in column 1, lines 19-35 and in column 2, line 35 through column 4, line 5, discloses epoxy resin/metal plates (1,2) defining and an enclosure/cavity and a highly thermally conductive surface region thereon. The enclosure comprises thermally conductive (aluminum, sintered metal, fibre flock), fibrous, porous material (5) homogeneously disposed within a phase change liquid and located within the cavity. Regarding claim 7, the porous material is considered to be homogeneously disposed within the cavity as illustrated in Figure 3 of Lebailly et al. The patent of Lebailly et al. fails to disclose the thermally conductive fibers being graphite and extending from the thermally conductive surface of an epoxy resin plate.

The patent of Hamburgen, in Figures 1-3 and in column 2, line 48 through column 4, line 41, discloses that it is known to have a plurality/mat/matrix of graphite fibers/porous material

(31,51) bonded to and externally extending from a thermally conductive surface for the purpose of increasing the surface area of the evaporator, increasing the number of nucleation sites and increasing the rate at which heat is removed from an integrated circuit. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Lebailly et al. a plurality/mat/matrix of graphite fibers bonded to and externally extending from a thermally conductive surface for the purpose of increasing the surface area of the evaporator, increasing the number of nucleation sites and increasing the rate at which heat is removed from an integrated circuit as disclosed in Hamburgen. The remaining limitations are considered to be clearly met.

Claims 2, 8, 18 and 20-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Lebailly et al. in view of Hamburgen as applied to claims 1, 7, 17 and 19 above, and further in view of Hermanns et al. The patent of Lebailly et al. as modified, discloses all the claimed features of the invention with the exception of the phase change material being a wax. Regarding claim 8, the porous material is considered to be homogeneously disposed within the cavity as illustrated in Figure 3 of Lebailly et al.

The patent of Hermanns et al., in Figures 1a-3b, in column 1, lines 27-29, in column 3, lines 25-29 and in column 4, lines 22-31, discloses a solid to liquid phase change material, such as a paraffin wax (1,1b), filled within an enclosed cavity for the purpose of uniformly transferring heat. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Lebailly et al. as modified, the phase change material being a wax for the purpose of uniformly transferring heat as disclosed in Hermanns et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Atkinson whose telephone number is (703) 308-2603.

CHRISTOPHER ATKINSON
PATENT EXAMINER

C.A.
August 9, 1999